IN THE CLAIMS:

1. (Currently Amended) A polygon scanning system comprising:

a polygon having a reflective facet, the facet having a leading edge and a trailing edge;

a rotation mechanism for rotating the polygon from the leading edge to the trailing edge of the facet once per revolution of the polygon;

a first light source for directing a first light beam to impinge on an incident location on the facet at a first incident angle such that the first light beam is reflected by the facet to scan a first portion of a surface of a substrate during a first time interval when the rotation mechanism is rotating the polygon between the leading edge and the trailing edge of the facet during a first revolution of the polygon; and

a second light source for directing a second light beam to impinge on the facet at substantially the incident location, at a second incident angle such that the second light beam is reflected by the facet to scan a second portion of the surface of the substrate during a second time interval subsequent to the first time interval when the rotation mechanism is rotating the polygon between the leading edge and the trailing edge of the facet during the first revolution of the polygon.

2. (Original) The system of claim 1, wherein the first and second light sources comprise a single light beam generator for generating an original light beam and a first beam splitter for splitting the original light beam into the first and second light beams.

3. (Original) The system of claim 2, comprising a mirror for directing the second light beam to impinge on the facet.

4. (Original) The system of claim 2, comprising a second beam splitter for splitting the original light beam into a third light beam to impinge on the facet at a third incident angle such that the third light beam is reflected by the facet to scan a third portion of the surface of the substrate during a third time interval subsequent to the second time interval when the rotation mechanism is rotating the polygon.

5. (Original) The system of claim 4, comprising a mirror for directing the third light beam to impinge on the facet.

6. (Original) The system of claim 1, wherein the first and second light sources comprise a single light beam generator for generating an original light beam and a diffraction grating for diffracting the original light beam into the first and second light beams.

7. (Original) The system of claim 6, wherein the diffraction grating is for diffracting the original light beam into N light beams, including the first and second light beams, to impinge on the facet at an Nth incident angle such that the Nth light beam is reflected by the facet to scan an Nth portion of the surface of the substrate during an Nth time interval when the rotation mechanism is rotating the polygon.

8. (Original) The system of claim 1, wherein the first and second light sources comprise a single light beam generator for generating an original light beam, and an acousto-optic deflector for deflecting the original light beam to impinge on the facet at the first and second incident angles at the first and second time intervals, respectively.

9. (Original) The system of claim 8, wherein the polygon comprises a plurality of facets, and wherein the acousto-optic deflector is for compensating for a reflectivity variance between the plurality of facets.

10. (Original) The system of claim 1, further comprising an optical system disposed between the facet and the substrate for focusing the first and second light beams.

11. (Original) The system of claim 1, wherein the first and second light sources provide laser light.

12. (Original) The system of claim 2, wherein the original light source is a laser light source.

13. (Original) The system of claim 11, wherein wherein the first light source is for providing laser light at a first wavelength, and the second light source is for providing laser light at a second wavelength different from the first wavelength.

14. (Original) The system of claim 1, wherein the first and second light sources are lamps.

15. (Previously Amended) A polygon scanning system comprising:

a polygon having a reflective facet;

a rotation mechanism for rotating the polygon; and

a light source for directing a plurality of light beams to impinge on the facet such that each light beam impinges on the facet at substantially the same incident location, at an incident angle different than the incident angles of the other light beams, and each light beam is reflected by the facet to scan a respective portion of a surface of a substrate during a respective time interval when the rotation mechanism is rotating the polygon;

wherein the facet has a total surface area, and each of the plurality of light beams is reflected onto the substrate surface using a respective portion of the facet surface;

wherein the sum of the respective portions of the facet surface used to reflect the light beams is greater than 90 percent of the total surface area.

16. (Currently Amended) A method comprising:

rotating a polygon having a reflective facet from a leading edge of the facet to a trailing edge of the facet once per revolution of the polygon;

directing a first light beam to impinge on an incident location on the facet at a first incident angle such that a first light beam is reflected by the facet to scan a first portion of a surface of a substrate during a first time interval while the polygon is rotating between the leading edge and the trailing edge of the facet during a first revolution of the polygon; and

directing a second light beam to impinge on the facet at substantially the incident location, at a second incident angle such that a second light beam is reflected by the facet to scan a second portion of the surface of the substrate during a second time interval subsequent to the first time interval while the polygon is rotating between the leading edge and the trailing edge of the facet during the first revolution of the polygon.

17. (Original) The method of claim 16, comprising generating a single original light beam and splitting the original light beam into the first and second light beams.

18. (Original) The method of claim 17, comprising splitting the original light beam into a third light beam to impinge on the facet at a third incident angle such that the third light beam is reflected by the facet to scan a third portion of the surface of the substrate during a third time interval subsequent to the second time interval while the polygon is rotating.

19. (Original) The method of claim 16, comprising generating a single original light beam and diffracting the original light beam into the first and second light beams.

20. (Original) The method of claim 19, comprising diffracting the original light beam into N light beams, including the first and second light beams, to impinge on the facet at an Nth incident angle such that the Nth light beam is reflected by the facet to scan an Nth portion of the surface of the substrate during an Nth time interval while the polygon is rotating.

21. (Original) The method of claim 16, comprising focusing the first and second light beams between the facet and the substrate.

22. (Previously Amended) A method comprising:

rotating a polygon having a reflective facet; and

directing a plurality of light beams to impinge on the facet at substantially the same incident location, such that each light beam impinges on the facet at an incident angle different

than the incident angles of the other light beams, and each light beam is reflected by the facet to scan a respective portion of a surface of a substrate during a respective time interval while the polygon is rotating;

wherein the facet has a total surface area, and each of the plurality of light beams is reflected onto the substrate surface using a respective portion of the facet surface;

wherein the sum of the respective portions of the facet surface used to reflect the light beams is greater than 90 percent of the total surface area.

23. (Original) The system of claim 1, wherein the first portion of the surface of the substrate is the same as the second portion of the surface of the substrate.

24. (Original) The system of claim 1, further comprising a movable stage for supporting the substrate and moving the substrate relative to the polygon.

25. (Original) The system of claim 24, wherein the stage is for moving the substrate such that the first portion of the surface of the substrate is different than the second portion of the surface of the substrate.

26. (Original) The system of claim 4, further comprising a movable stage for supporting the substrate and moving the substrate relative to the polygon such that the first, second and third portions of the surface of the substrate are different from each other.

27. (Original) The system of claim 7, further comprising a movable stage for supporting the substrate and moving the substrate relative to the polygon such that the N portions of the surface of the substrate are different from each other.

28. (Original) The system of claim 15, further comprising a movable stage for supporting the substrate and moving the substrate relative to the polygon such that the respective portions of the surface of the substrate are different from each other.

29. (Original) The method of claim 16, comprising moving the substrate such that the first portion of the surface of the substrate is different than the second portion of the surface of the substrate.

30. (Original) The method of claim 18, further comprising moving the substrate relative to the polygon such that the first, second and third portions of the surface of the substrate are different from each other.

31. (Original) The method of claim 20, further comprising moving the substrate relative to the polygon such that the N portions of the surface of the substrate are different from each other.

32. (Original) The method of claim 22, comprising moving the substrate relative to the polygon such that the respective portions of the surface of the substrate are different from each other.

33. (Original) The method of claim 16, comprising generating a single original light beam and deflecting the original light beam to impinge on the facet at the first and second incident angles at the first and second time intervals, respectively.